

ABSTRACT

A plasma arc torch includes a first consumable component having a longitudinally extending connection end. A second component in a coaxial relationship with the first consumable component has a bore defined therein into which the connection end of the first component extends. The bore includes a contact surface defined substantially perpendicular to a longitudinal axis of the torch. The connection end of the first component includes a contact shoulder defined substantially perpendicular to the longitudinal axis of the torch, a locking engagement section configured to engage with a corresponding section of the second component, and an alignment section extending longitudinally from the engagement section. The alignment section has a diameter closely matching that of the bore such so as to minimize axial misalignment between the first consumable component and the second component. The first consumable component may be an electrode.